

05-90
08/14

#7



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RAW SEQUENCE LISTING

DATE: 08/12/2002

PATENT APPLICATION: US/10/098,514

TIME: 15:01:01

Input Set : A:\PTO.VSK.txt

Output Set: N:\CRF4\08122002\J098514.raw

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3 <110> APPLICANT: Chang, Sandra P
4     Christopher, David A
5     Vine, Benjamin
6     Su, Wei-Wen
7     Bugos, Robert
9 <120> TITLE OF INVENTION: PLASMODIUM FALCIPARUM MEROZOITE SURFACE PROTEIN-1 MALARIA
PRODUCED IN
10    TRANSGENIC PLANTS
12 <130> FILE REFERENCE: A-71339/RFT/TAL/NBC
14 <140> CURRENT APPLICATION NUMBER: US 10/098,514
C--> 15 <141> CURRENT FILING DATE: 2002-08-06
17 <150> PRIOR APPLICATION NUMBER: US 09/500,376
18 <151> PRIOR FILING DATE: 2000-02-08
20 <150> PRIOR APPLICATION NUMBER: US 60/274,599
21 <151> PRIOR FILING DATE: 2001-03-09
23 <160> NUMBER OF SEQ ID NOS: 19
25 <170> SOFTWARE: PatentIn version 3.1
27 <210> SEQ ID NO: 1
28 <211> LENGTH: 1149
29 <212> TYPE: DNA
30 <213> ORGANISM: Artificial sequence
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33 <223> OTHER INFORMATION: synthetic
35 <220> FEATURE:
36 <221> NAME/KEY: sig_peptide
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38 <223> OTHER INFORMATION:
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46 aatattttca cgttcaacct caacctaaat gacatcctca actcgcgcct caagaagcga      180
48 aaatacttcc tcgacgtggt ggaatccgac cttatgcaat tcaagcacat tagctctaac      240
50 gagtacatca tagaggacag cttcaagctc ttgaattcag aacagaagaa caccctccta      300
52 aagtcctaca aatacattaa ggagtctggt gagaacgaca tcaagttcgc ccaggaagga      360
54 attagctact atgagaaagt cctggctaaa tacaaggacg acttggaag cattaagaag      420
56 gtaatcaaag aagagaagga aaagtttccg agctctccac ccacaactcc cccatcgcct      480
58 gcaaagaccg acgagcagaa aaaagaaagt aagttccttc cattcctcac caacatcgaa      540
60 actctatata acaacctggt gaacaagatt gatgactact taatcaactt gaaggcgaaa      600
62 attaatgact gtaacgtcga aaaggatgaa gccacgta agatcaccaa gctttccgat      660
64 ctcaaagcca tcgacgataa gattgacctg ttaagaacc acaacgattt cgacgcaatc      720
66 aaaaagttaga tcaacgacga tactaagaaa gacatgcttg gaaaactgct gtcgacaggc      780
68 ttggtccaaa acttcccga caccattata agcaagctga tcgaaggaaa gtttcaggat      840
70 atgctgaaca tctctcagca tcaatgcgtg aagaagcaat gtcccagaaa ttcagggttc      900
72 ttccgccact tagacgaaag ggaggaatgt aaatgcctgc tgaattataa acaggaagga      960

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74 gacaagtgcg tagagaatcc taacccaacc tgtaacgaaa ataacggtgg ctgcatgct 1020
76 gacgctaagt gtaccgagga ggacagcggt tccaatggca agaaaataac ttgcgaatgc 1080
78 acgaagcccg atagttaccc tctcttcgac ggtatcttct gctcccatga tgagctttaa 1140
80 gagctcacc 1149
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84 <211> LENGTH: 383
85 <212> TYPE: PRT
86 <213> ORGANISM: Artificial sequence
88 <220> FEATURE:
89 <223> OTHER INFORMATION: synthetic
91 <220> FEATURE:
92 <221> NAME/KEY: MISC_FEATURE
93 <222> LOCATION: (380)..(380)
94 <223> OTHER INFORMATION: "Xaa" at position 380 represents a stop codon
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99 Ala Glu Phe Asp Asn Ile Leu Ser Asp Asn Ile Leu Ser Gly Phe Glu
100 1 5 10 15
103 Asn Glu Tyr Asp Val Ile Tyr Leu Lys Pro Leu Ala Gly Val Tyr Arg
104 20 25 30
107 Ser Leu Lys Lys Gln Ile Glu Lys Asn Ile Phe Thr Phe Asn Leu Asn
108 35 40 45
111 Leu Asn Asp Ile Leu Asn Ser Arg Leu Lys Lys Arg Lys Tyr Phe Leu
112 50 55 60
115 Asp Val Leu Glu Ser Asp Leu Met Gln Phe Lys His Ile Ser Ser Asn
116 65 70 75 80
119 Glu Tyr Ile Ile Glu Asp Ser Phe Lys Leu Leu Asn Ser Glu Gln Lys
120 85 90 95
123 Asn Thr Leu Leu Lys Ser Tyr Lys Tyr Ile Lys Glu Ser Val Glu Asn
124 100 105 110
127 Asp Ile Lys Phe Ala Gln Glu Gly Ile Ser Tyr Tyr Glu Lys Val Leu
128 115 120 125
131 Ala Lys Tyr Lys Asp Asp Leu Glu Ser Ile Lys Lys Val Ile Lys Glu
132 130 135 140
135 Glu Lys Glu Lys Phe Pro Ser Ser Pro Pro Thr Thr Pro Pro Ser Pro
136 145 150 155 160
139 Ala Lys Thr Asp Glu Gln Lys Lys Glu Ser Lys Phe Leu Pro Phe Leu
140 165 170 175
143 Thr Asn Ile Glu Thr Leu Tyr Asn Asn Leu Val Asn Lys Ile Asp Asp
144 180 185 190
147 Tyr Leu Ile Asn Leu Lys Ala Lys Ile Asn Asp Cys Asn Val Glu Lys
148 195 200 205
151 Asp Glu Ala His Val Lys Ile Thr Lys Leu Ser Asp Leu Lys Ala Ile
152 210 215 220
155 Asp Asp Lys Ile Asp Leu Phe Lys Asn His Asn Asp Phe Asp Ala Ile
156 225 230 235 240
159 Lys Lys Leu Ile Asn Asp Asp Thr Lys Lys Asp Met Leu Gly Lys Leu
160 245 250 255
163 Leu Ser Thr Gly Leu Val Gln Asn Phe Pro Asn Thr Ile Ile Ser Lys
164 260 265 270

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167 Leu Ile Glu Gly Lys Phe Gln Asp Met Leu Asn Ile Ser Gln His Gln
168           275           280           285
171 Cys Val Lys Lys Gln Cys Pro Glu Asn Ser Gly Cys Phe Arg His Leu
172           290           295           300
175 Asp Glu Arg Glu Glu Cys Lys Cys Leu Leu Asn Tyr Lys Gln Glu Gly
176 305           310           315           320
179 Asp Lys Cys Val Glu Asn Pro Asn Pro Thr Cys Asn Glu Asn Asn Gly
180           325           330           335
183 Gly Cys Asp Ala Asp Ala Lys Cys Thr Glu Glu Asp Ser Gly Ser Asn
184           340           345           350
187 Gly Lys Lys Ile Thr Cys Glu Cys Thr Lys Pro Asp Ser Tyr Pro Leu
188           355           360           365
W--> 191 Phe Asp Gly Ile Phe Cys Ser His Asp Glu Leu Xaa Glu Leu Thr
192           370           375           380
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196 <211> LENGTH: 1149
197 <212> TYPE: DNA
198 <213> ORGANISM: Artificial sequence
200 <220> FEATURE:
201 <223> OTHER INFORMATION: synthetic
203 <220> FEATURE:
204 <221> NAME/KEY: sig_peptide
205 <222> LOCATION: (1)..(24)
206 <223> OTHER INFORMATION:
209 <400> SEQUENCE: 3
210 cggatccaag gagatataac aatggacaac atcctcagtg gcttcgagaa cgagtacgac 60
212 gtaatctacc taaagcccct tgccggtgtc taccgttcat tgaagaaaca gatagaaaag 120
214 aatattttca cgttcaacct caacctaaat gacatcctca actcgcgcct caagaagcga 180
216 aaatacttcc tcgacgtgtt ggaatccgac cttatgcaat tcaagcacat tagctctaac 240
218 gagtacatca tagaggacag cttcaagctc ttgaattcag aacagaagaa caccctccta 300
220 aagtcctaca aatacattaa ggagtctgtt gagaacgaca tcaagttcgc ccaggaagga 360
222 attagctact atgagaaagt cctggctaaa tacaaggacg acttgaaaag cattaagaag 420
224 gtaatcaaag aagagaagga aaagttcccg agctctccac ccacaactcc cccatcgct 480
226 gcaaagaccg acgagcagaa aaaagaaagt aagttccttc cattcctcac caacatcgaa 540
228 actctatata acaacctggt gaacaagatt gatgactact taatcaactt gaaggcgaaa 600
230 attaatgact gtaacgtcga aaaggatgaa gccacgtta agatcaccaa gctttccgat 660
232 ctcaaagcca tcgacgataa gattgacctg tttagaacc acaacgattt cgacgcaatc 720
234 aaaaagttga tcaacgacga tactaagaaa gacatgcttg gaaaactgct gtcgacaggc 780
236 ttggtccaaa acttcccga caccattata agcaagctga tcgaaggaaa gtttcaggat 840
238 atgctgaaca tctctcagca tcaatgcgtg aagaagcaat gtcccagaaa ttcagggtgc 900
240 ttccgccact tagacgaaag ggaggaatgt aaatgcctgc tgaattataa acaggaagga 960
242 gacaagtgcg tagagaatcc taaccaacc tgtaacgaaa ataacggtgg ctgcatgct 1020
244 gacgctaagt gtaccgagga ggacagcggg tccaatggca agaaaataac ttgcgaatgc 1080
246 acgaagcccg atagttaccc tctcttcgac ggtatcttct gctcccatga tgagctttaa 1140
248 gagctcacc
251 <210> SEQ ID NO: 4
252 <211> LENGTH: 383
253 <212> TYPE: PRT
254 <213> ORGANISM: Artificial sequence

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256 <220> FEATURE:
257 <223> OTHER INFORMATION: synthetic
259 <220> FEATURE:
260 <221> NAME/KEY: MISC_FEATURE
261 <222> LOCATION: (380)..(380)
262 <223> OTHER INFORMATION: "Xaa" at position 380 represents a stop codon
265 <400> SEQUENCE: 4
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268 1 5 10 15
271 Asn Glu Tyr Asp Val Ile Tyr Leu Lys Pro Leu Ala Gly Val Tyr Arg
272 20 25 30
275 Ser Leu Lys Lys Gln Ile Glu Lys Asn Ile Phe Thr Phe Asn Leu Asn
276 35 40 45
279 Leu Asn Asp Ile Leu Asn Ser Arg Leu Lys Lys Arg Lys Tyr Phe Leu
280 50 55 60
283 Asp Val Leu Glu Ser Asp Leu Met Gln Phe Lys His Ile Ser Ser Asn
284 65 70 75 80
287 Glu Tyr Ile Ile Glu Asp Ser Phe Lys Leu Leu Asn Ser Glu Gln Lys
288 85 90 95
291 Asn Thr Leu Leu Lys Ser Tyr Lys Tyr Ile Lys Glu Ser Val Glu Asn
292 100 105 110
295 Asp Ile Lys Phe Ala Gln Glu Gly Ile Ser Tyr Tyr Glu Lys Val Leu
296 115 120 125
299 Ala Lys Tyr Lys Asp Asp Leu Glu Ser Ile Lys Lys Val Ile Lys Glu
300 130 135 140
303 Glu Lys Glu Lys Phe Pro Ser Ser Pro Pro Thr Thr Pro Pro Ser Pro
304 145 150 155 160
307 Ala Lys Thr Asp Glu Gln Lys Lys Glu Ser Lys Phe Leu Pro Phe Leu
308 165 170 175
311 Thr Asn Ile Glu Thr Leu Tyr Asn Asn Leu Val Asn Lys Ile Asp Asp
312 180 185 190
315 Tyr Leu Ile Asn Leu Lys Ala Lys Ile Asn Asp Cys Asn Val Glu Lys
316 195 200 205
319 Asp Glu Ala His Val Lys Ile Thr Lys Leu Ser Asp Leu Lys Ala Ile
320 210 215 220
323 Asp Asp Lys Ile Asp Leu Phe Lys Asn His Asn Asp Phe Asp Ala Ile
324 225 230 235 240
327 Lys Lys Leu Ile Asn Asp Asp Thr Lys Lys Asp Met Leu Gly Lys Leu
328 245 250 255
331 Leu Ser Thr Gly Leu Val Gln Asn Phe Pro Asn Thr Ile Ile Ser Lys
332 260 265 270
335 Leu Ile Glu Gly Lys Phe Gln Asp Met Leu Asn Ile Ser Gln His Gln
336 275 280 285
339 Cys Val Lys Lys Gln Cys Pro Glu Asn Ser Gly Cys Phe Arg His Leu
340 290 295 300
343 Asp Glu Arg Glu Glu Cys Lys Cys Leu Leu Asn Tyr Lys Gln Glu Gly
344 305 310 315 320
347 Asp Lys Cys Val Glu Asn Pro Asn Pro Thr Cys Asn Glu Asn Asn Gly
348 325 330 335

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Input Set : A:\PTO.VSK.txt

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351 Gly Cys Asp Ala Asp Ala Lys Cys Thr Glu Glu Asp Ser Gly Ser Asn
352             340             345             350
355 Gly Lys Lys Ile Thr Cys Glu Cys Thr Lys Pro Asp Ser Tyr Pro Leu
356             355             360             365
W--> 359 Phe Asp Gly Ile Phe Cys Ser His Asp Glu Leu Xaa Glu Leu Thr
360             370             375             380
363 <210> SEQ ID NO: 5
364 <211> LENGTH: 38
365 <212> TYPE: DNA
366 <213> ORGANISM: Artificial sequence
368 <220> FEATURE:
369 <223> OTHER INFORMATION: synthetic
371 <400> SEQUENCE: 5
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375 <210> SEQ ID NO: 6
376 <211> LENGTH: 42
377 <212> TYPE: DNA
378 <213> ORGANISM: Artificial sequence
380 <220> FEATURE:
381 <223> OTHER INFORMATION: synthetic
383 <400> SEQUENCE: 6
384 ctgcgagctc ttattaaagc tcatcatgct gcagaaaata cc 42
387 <210> SEQ ID NO: 7
388 <211> LENGTH: 28
389 <212> TYPE: DNA
390 <213> ORGANISM: Artificial sequence
392 <220> FEATURE:
393 <223> OTHER INFORMATION: synthetic
395 <400> SEQUENCE: 7
396 ctgcgagctc ttattaatga tgatgatg 28
399 <210> SEQ ID NO: 8
400 <211> LENGTH: 42
401 <212> TYPE: DNA
402 <213> ORGANISM: Artificial sequence
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405 <223> OTHER INFORMATION: synthetic
407 <400> SEQUENCE: 8
408 ggtgagctct taaagctcat catgggagca gaagataccg tc 42
411 <210> SEQ ID NO: 9
412 <211> LENGTH: 24
413 <212> TYPE: DNA
414 <213> ORGANISM: Artificial sequence
416 <220> FEATURE:
417 <223> OTHER INFORMATION: synthetic
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423 <210> SEQ ID NO: 10
424 <211> LENGTH: 42
425 <212> TYPE: DNA

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RAW SEQUENCE LISTING ERROR SUMMARY DATE: 08/12/2002
PATENT APPLICATION: US/10/098,514 TIME: 15:01:02

Input Set : A:\PTO.VSK.txt
Output Set: N:\CRF4\08122002\J098514.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:2; Xaa Pos. 380
Seq#:4; Xaa Pos. 380

VERIFICATION SUMMARY

DATE: 08/12/2002

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TIME: 15:01:02

Input Set : A:\PTO.VSK.txt

Output Set: N:\CRF4\08122002\J098514.raw

L:15 M:271 C: Current Filing Date differs, Replaced Current Filing Date

L:191 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:368

L:359 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:368